DOCUMENT RESUME

ED 261 337 CS 008 105

AUTHOR Voorhees, Patricia Jean
TITLE Spelling Achievement of Average Ability Students, Grade 7.
PUB DATE Apr 85
NOTE 32p.; M.A. Thesis, Kean College of New Jersey.
PUB TYPE Reports - Research/Technical (143) -- Dissertations/Theses - Master Theses (042)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Comparative Analysis; *Educational Research; Elementary Education; Grade 7; *Multisensory Learning; Retention (Psychology); Skill Development; *Spelling; *Spelling Instruction; *Teaching Methods
IDENTIFIERS *Visual Auditory Kinesthetic Tactile Instruction

ABSTRACT

A study was conducted to determine whether the VAK teaching method, using color coding as a motivational tool, improves spelling achievement more effectively than a more conventional method. The VAK method is a multisensory approach to teaching reading and spelling through the visual, auditory, kinesthetic, and tactile modalities. Forty-three seventh graders, divided into two groups, were pretested using the Wide Range Achievement Test (WRAT) to determine spelling grade level. During the next 15 weeks, one group received spelling instruction using the conventional study/test method, while the other group received the study/test method and additional instruction using the VAK method. The kinesthetic part of the procedure was implemented by color coding the spelling words studied each week. Students were then posttested using the WRAT. The results indicated that the multisensory approach helped some students retain words for a longer period of time. Students receiving instruction with the VAK method appeared to be more interested in doing the spelling task each week and felt that tracing the word with colored markers helped keep their interests and motivated them to complete their work. (Tables of data are included.) (HTH)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

BEST COPY AVAILABLE

ED261337

892

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

X This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

SPELLING ACHIEVEMENT OF AVERAGE ABILITY STUDENTS GRADE 7

by

Patricia Jean Voorhees

Submitted in partial fulfillment of the requirement
for the Master of Arts degree in Education at
Kean College of New Jersey
April 1985

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Patricia J. Voorhees

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

CS008105

TABLE OF CONTENTS

		PAGE
1.	INTRODUCTION TO STUDY	1
2.	ANALYSIS OF PREVIOUS RESEARCH	4
3.	DESIGN OF THE STUDY	15
4.	PRESENTATION AND ANALYSIS OF DATA	18
5.	SUMMARY AND CONCLUSIONS	21
	BIBLIOGRAPHY	23
	APPENDIX	25

Chapter One
INTRODUCTION TO STUDY

INTRODUCTION

This research report is an attempt to compare the spelling achievement of two homogeneously-grouped seventh grade samples of average ability in a middle school.

STATEMENT OF THE PROBLEM

Does the VAK teaching method using color coding as a motivational tool improve spelling achievement of students in the seventh grade when compared with the VAK method alone?

HYPOTHESIS

The achievement scores of students taught using the color coding approach will not be higher than those students taught by the conventional method.

THE SIGNIFICANCE OF THE PROBLEM

The purpose of this study is twofold. First, does the color coded VAK method of teaching spelling help students to become better spellers? Second, will the use of color coding in the tracing step in the VAK systematic method impell students to better enjoy spelling activities and result in improved test scores?

THE PURPOSES OF THE STUDY

Ability grouping is a significant factor at the middle school in helping a student to work comfortably on his achievement level, and provides opportunities and encouragement for success in his classroom environment. The middle school's philosophy is child-centered and the findings of this research project may help in providing data for future spelling programs within the entire school district.

ASSUMPTIONS, LIMITATIONS, AND DELIMITATIONS

It is assumed that the WIDE RANGE ACHIEVEMENT TEST is a reliable and valid measure of student ability. For the purpose of this study, it is assumed that the spelling instruction provided to these students is consistent with the appropriate levels of spelling ability.

The sampling of students used in this study is limited to two homogeneously-grouped seventh grade samples of average ability in a middle school. The limited amount of time for this study may not be of sufficient length to make any conclusive statements or provide enough time for measurable improvement. The data will be gathered primarily among middle class seventh grade students of average ability.

DEFINITIONS OF TERMS

For the purpose of reader understanding, the following terms need to be defined. VAK refers to a multisensory approach to teaching reading and spelling through the visual, auditory, kinesthetic, and tactile modalities. Color coding is the use of varied colored markers or crayons for a specific purpose in reading, writing, or spelling. One component of the VAK approach is kinesthetic which is the ability to interpret data through bodily movements and muscle feeling. The "study-test" method as used in this study refers to a systematic method for teaching which introduces the spelling words, students study the words, and are then tested at the end of the week.

SUMMARY

In this study, two intact groups of average-ability students in seventh grade were evaluated as to their respective spelling achievement scores attained using the VAK teaching approach. Color coding was used as a motivational tool in addition to the VAK method with one sample.

Chapter Two
ANALYSIS OF PREVIOUS LITERATURE

INTRODUCTION

Included in this chaper is a review of the major research completed in the areas of spelling and the factors affecting the spelling achievement of students.

ORGANIZATION OF THE CHAPTER

The body of literature on spelling instruction is so large that it has been divided into three major areas: Early research, instructional methods, and the effective and ineffective practices of spelling.

Early Research

Historically, the effort put forth to learn to spell was valued because it was thought to build character and to promote mental discipline. In colonial times, it was not unusual for spelling instruction to be characterized by instructional practices which appear somewhat sadistic to us today. Students were sometimes required to learn to spell difficult words for no other reason than that the words were difficult. Nebuzaradum, Estremadure, Saxigesime and Abelbethmaleah were standard fare (Hodges). Competitions ("spelling bees") brought glory to those who mastered this

content and humiliation (and sometimes physical punishment) to those who did not.

All this has changed considerably. Contemporary practice involves initial spelling instruction around words which are frequently used in the language, and research and expert opinion indicate that this is the most effective approach to building spelling proficiency (Fitzsimmons, and Loomer; Hollingsworth, 1978, Wenzel, 1977; Bloomer, 1961).

"The ability to spell correctly has been considered a social virtue throughout the Western-world from ancient times to the present. Correct spelling is believed to be important not only for accurate written communication; it is commonly regarded by society to be an attribute of literacy. For these and other reasons, the teaching of spelling has long been an integral part of the formal schooling". (Hodges)

Allred said, "Accurate spelling is important at all levels of written composition. A writer's creativity and effectiveness are influenced greatly by spelling ability. Good spellers are able to express their thoughts on paper freely, while poor spellers are hampered in their ability to communicate in writing.

Morrison and Mania (1982) hypothesized that reading disability may present a problem in acquiring knowledge about words, particularly knowledge about spelling sound correspondences. They said that failure to master the complex system

of rules mapping symbols to sounds leads to poor word acquisition for disabled readers. Problems in learning these phonic rules prevents the development of rapid automated word decoding skills, which in turn slows the development of higher order reading and comprehension skills. There is evidence that phonemic analysis skill correlates with and predicts reading and spelling success (Fox and Routh, 1980; Lundberg, Olofsson and Wells, 1980).

Spelling is one subject area in which neither divergent thinking nor creativity is encouraged; only one pattern or arrangement of words is correct. Spelling a word is a much more difficult task than reading a word. Recognizing a word in print is a decoding task, whereas reproducing a word is an encoding task and occasion to draw upon peripheral clues is greatly reduced.

The literature on spelling instruction reflects the fact that there is virtually no disagreement about the importance of developing spelling proficiency. While most people agree on the importance of accurate spelling for written communication, this high level of agreement has not resulted in a high level of spelling proficiency among society. Along with the many popular articles interrogating the educational system as to "Why Johnny can't read," there is considerable concern that "Johnny," even when he becomes a college student, can't spell (Kelso, 1977; Ireland, 1979).

Instructional Methods

Much of the controversy about how spelling skills should be taught has had to do with conflicting ideas about the rationality/irrationality of the English orthographic system. The degree to which English orthography is or isn't rational, systematic and predictable has been argued since before this continent was settled by English-speaking peoples (Hodges; Williamson and Wooden, 1980; Templeton, 1979).

Those who find the English spelling system rational have tended to advocate instructional practices which are characterized by presenting rules to be learned, giving emphasis to phonics, and making the findings of modern linguistics research part of the school curriculum Nicholson and Schacter, 1979; Schwartz and Doehring, 1977, etc.). Allred's review concludes that, whereas phonics at times has been the way to teach spelling, it is useful to regard it as one of several approaches to be used together for building spelling skills. C.S. Beers (1980) and J.W. Beers (1980) advocate phonics instruction but emphasize the importance of readiness on the part of beginning readers to understand phonic generalizations. Graham and Miller (1979) are conservative of their support of phonics instruction. Some others (Mazurkiewicz, 1978) advise against using standard phonetic instruction at all, but most writers find this method beneficial if used cautiously. Burmeister (1968)

compared many studies to conclude that few phonic generalizations are worthy of being taught, and Emans (1967) stated that only eighteen out of forty-five generalizations were worthy of use.

Spelling rules, as usually taught, include phonetic rules and a variety of rules pertaining to capitalization, the addition of prefixes and suffixes, abbreviation, and so on (Graham and Miller). Loomer's 1978 review/ summary concluded that "research supports teaching pupils only those rules that apply 80% or more of the time. According to Williamson and Wooden, "Students should be taught that English orthography is rational and methods presented to enable them to produce correct spelling using knowledge of phonics, semantics, etymology and preferences".

Those whose study of English spelling has led them to conclude that it is largely irrational tend to favor instructional practices which emphasize whole-word learning, sight methods; "incidental" learning from much experience with reading and writing; or the use of nonstandard orthographics, such as the British Initial Teaching Alphabet (ITA) as a beginning reading/spelling tool. The rationale for ITA is that it allows children to learn to read more quickly and with less frustration. Proponents such as Mazurkiewicz (1964; 1978) further claim that ITA--which is both an instructional program as well as an orthographic system-- permits

children to write with much greater facility, promotes independent work habits, and results in superior language arts skills (including spelling) after transition to traditional orthography. Gilooly (1966) refuted the positive claims made for ITA and has indicted this system for causing ongoing reading and spelling problems among those disabled children. Passanante (1979) concluded that, "There is no clear-cut indication the i.t.a. provides a definitely superior system for reading instruction. The experimental data is inconclusive as to spelling skills, and there is some evidence that negative transfer may occur in children who have initially learned inappropriate spelling".

Fernald (1943) developed a multisensory approach that involves the visual, auditory, kinesthetic, and tactile senses. He combined a language experience and kinesthetic techniques along with the whole word approach. This method stimulating the eye, ear, touch, and motor avenues simultaneously will aid in the learning of a word. The child will hear the word, say the word, see the word, feel the word, write the word, and perhaps spell the word. Gillingham and Stillman (1968) used the kinesthetic techniques but instead of the whole word approach, a student is taught letters of a word, one at a time. Hodges (1966) says a child who has learned to spell by use of the senses of hearing, sight, and touch is in a good position to recall the spelling

when he needs it in his writing because any or all the sensory modes can elicit his memory of it. In 1978, Caban compared three instructional approaches. His results showed that the mental imagery method was somewhat better than the others in producing better spellers. Hardin, Berstein, and Shands (1978) tell us that good spellers are able to "feel" the word by hearing its parts in their heads.

The VAKT method of teaching spelling consists of explicit sequential steps that both the instructor and child must follow. In the copying or tracing step a child may use crayons or markers instead of a pencil in writing the words. There are research findings which clearly show that color has an effect on learner achievement and motivation. Color coding has a more positive impact on tests representing visual tasks (drawing, identification) rather than more visual tasks (terminology, comprehension.).

Effectiveness of the color coded instructional materials may reside in their ability to demand sustained student attention and interaction with the content along with their ability to be able to provide an enhanced associative memory structure. (Lamberski, 1982) Evidence suggests that visual materials used to complement instruction facilitate immediate retention of information but these effects disappear after six weeks. On the other hand, some researchers say that the use of color in instructional visuals

have been inconclusive. (Vander Meer, 1952; Kanner and Rosenstein, 1960; Katzman and Nyenhuis, 1972)

Effective and Ineffective Practices

Researchers say that there is a serious gap (which) appears to exist between the existing research in spelling and its application to the classroom (Loomer, 1978). Numerous others have asserted that it would be difficult to find a curricular area in which a greater mismatch exists between research and actual practice in spelling instruction (Ernest Horn, 1944, 1960, 1963; Fitzgerald, 1951; Petty, 1962).

Research past and present overwhelmingly supports the list form for initial presentation of words, whether the student is a small child just beginning to learn to spell, an older student in a remedial class, or an adult wanting to increase his or her spelling proficiency. This is Allred's conclusion as well as Fitzsimmons, Loomer, Cheek (1979), Ernest Horn (1960), Howley and Gallup (1922), Wallace (1972), and others. It also appears helpful for the words presented to be related phonetically, semantically or etymologically (Cheek), so that students can begin to develop inductive sense of language structures.

The literature on spelling instruction now favors encouraging children to write prolifically, without undue

emphasis on spelling accuracy (Blair and Rupley, 1977; Cramer, 1976; Forester, 1980; Templeton, 1979, etc). Therefore, emphasizing creative writing and tolerating misspellings is advised along with other activities directed at spelling skill development.

Most educators favor systematic spelling instruction. Hanna said, "Spelling needs to be taught separately in definite work sessions. We must not allow spelling to 'go by the board' in the sense of being casual or incidental; for proficiency in spelling is basic to success in all subjects where ideas must be expressed through writing.

Research has shown that correcting one's own misspellings is the single most important factor in learning to spell (Ernest Horn, 1963; Thomas Horn, 1946, Ruth, et al. 1974; Gates, 1931; Allred; Fitzsimmons and Loomer). Theorists recommend that use of the test-study-test method with unknown or misspelled words is advisable and should be given attention by way of study steps (Cited by Allred, 1977).

Typewriters, computers, and other aids have been found to be successful in improving a child's visualization skills (Caban, 1978) and Bartholome (1977) and Singh (1977), and has also been found effective in accelerating student learning rate (Rappaport and Savard, 1980). Such aids are valuable supplements to regular instructional methods but

should not replace the traditional methods. Also, spelling "bees" are helpful supplementary aids as well as other games related to spelling which encourage and stimulate student interest.

Fitzsimmons and Loomer in their extensive review/ summary included among their citations of research findings a list of those practices which are useless or minimally helpful in fostering the development of spelling skills. They include the following:

* Presenting words in syllabified form (As opposed to whole word presentation)
* Stimulating students in spelling through offering rewards
* Writing words several times
* Relying heavily on phonics
* Having students study "hard spots" in words
* Studying before attempting to spell words
* Individualizing time allocations
* Having students work out their own methods to spell
* Writing words in the air
* Initially presenting words in paragraphs or sentences

SUMMARY

This search of literature has focused on previous spelling research and effective and ineffective methods of instruction. There has been extensive research done in this curricular area but there still exists much disparity between what educators believe are effective teaching strategies and what is actually taught in the classroom in regards to these findings (Fitzsimmons and Loomer, 1978). Researchers conclude that spelling should be incorporated into all subject areas and most definitely should be paralleled with writing activities. There is a consensus with the educational community that in order to develop sufficient skills in spelling, approaches should be a combination of phonic rules, study of word parts, etymology, semantics, etc. and these skills can be reinforced through the modalities of sight, sound, touch, and feel of a word. Spelling "bees", games, and other aids such as the typewriter and computer are positive motivational tools and are suggested supplemental activities which may be added to the traditional teaching of spelling.

Chapter Three
DESIGN OF THE STUDY

INTRODUCTION

In order to discover information concerning spelling achievement for seventh grade students, a pre-test and post-test approach was utilized. The exact plan and nature of this study is reviewed in this chapter.

PROCEDURES USED

Two intact groups of average-ability students in seventh grade at the middle school level participated in this study. One group consisted of 25 students and the other only 18 students.

The pre-testing took place during the week of October 22, 1984. The WRAT (Wide Range Achievement Test) was used to determine spelling levels. Spelling words taken from the programmed text, Serendipity, (Houghton Mifflin Company, 1974), was used in instruction. Instruction was given on Monday and students were tested on Friday. One group was taught spelling using the conventional "study-test" method. The second group was also instructed by the study-test method but received additional imput through the use of the VAK method. The visual and auditory parts were

BEST COPY AVAILABLE

carried out in the conventional method as outlined above. The kinestetic part of this procedure was implemented by color coding (the use of colored markers) the spelling words studied that week. Also, a spelling interest-survey form was completed by each student to help evaluate the success of color coding for students at the junior high level. As the post-testing was completed during the week of February 5, 1985, a period of approximately fifteen weeks was allotted for instruction.

METHODS OF GATHERING DATA

The students were all tested by this researcher. They were given the spelling form of the test within the reading class. All students willingly participated in the testing. There were special instructional methods as previously noted above. The post-testing was completed in the same manner and situation.

DESCRIPTION OF DATA-GATHERING

The WRAT (Wide Range Achievement Test) for Spelling Level II was administered to obtain spelling scores. In addition to the WRAT Spelling Test, individual spelling tests were given each week. The word lists were taken from assigned stories in the Serendipity textbook, therefore

reinforcing the visual modality and the ability to see these words in a given context.

SUMMARY

The WRAT (Wide Range Achievement Test) for Spelling Level II was administered to obtain a grade level for spelling. Individual spelling tests were given during this period of fifteen weeks. This word list of approximately eight words was administered as both a pre-test and post-test in evaluating each student's progress. The forty-three students in this study were of average ability. Instruction was completed within a fifteen week period.

Chapter Four
PRESENTATION AND ANALYSIS OF DATA

INTRODUCTION

The WRAT (Wide Range Achievement Test for Spelling) was administered in order to find out the individual grade levels in spelling for students in two average ability groups. A list of eighty spelling words taken from the programmed text, Serendipity, was given on a pre-test and post-test basis. In this chapter, test scores are interpreted as to the gains made by each group.

DATA

In order to determine whether significant gains were made on the total scores, the pre-test and post-test scores were examined. Table I showing pretest results in this sampling indicates that the control group at the outset of the study achieved significantly better results than the experimental group in spelling on words selected for this study.

Table 1
The Mean, SD and t of Pre-test Scores

	M	SD	t	Significance
Experimental Sample	30.94	8.40	3.15	$<.01$
Control Sample	40.04	10.39		

Table 2
Post Test Results

	M	SD
Experimental Sample	59.5	10.18
Control Sample	61.6	14.0

As can be seen by a comparison of the results of the pre and post tests in tables one and two, gains in spelling achievement were made by each sample. Since the achievement of the samples were significantly different at the outset of the study, gain scores of each sample were obtained and subjected to analysis. Table 3 indicates that this experimental sample achieved a gain of 28 points or almost 7 points more than the control sample. The t test on the mean gain difference was found to be significantly less than .01.

Table 3
Gain Scores

	M	SD	t	Significance
Experimental Sample	28.55	12.54	4.77	$<.01$
Control Sample	21.56	13.36		

SUMMARY

Of the two groups involved in this study, both groups of students had mean gains. The control group showed a mean gain of 21.56 and the experimental group demonstrated a significant mean gain of 28.55. Although the experimental group was significantly lower on the pre-test of spelling, their score gains during this fifteen week period proved to be rather impressive.

Chapter Five
SUMMARY AND CONCLUSIONS

INTRODUCTION

A review of the entire research study is provided. In this chapter, a comparison of the results of the studies discussed in Chapter Two is also presented.

RESTATEMENT OF THE PROBLEM

A comparison of the spelling achievement among average-ability students using two different teaching strategies was examined.

DESCRIPTION OF PROCEDURES USED

Two intact groups of average-ability students in seventh grade at the middle school level participated in this study. Each group was administered a pre-test and post-test using the list of spelling words taken from the programmed text, Serendipity. A period of fifteen weeks elapsed between the pre-testing and post-testing.

PRINCIPAL FINDINGS AND CONCLUSIONS

The findings of this study are in agreement with the findings of the studies discussed in Chapter Two. These studies showed that a multisensory approach helps some

students retain words for a longer period of time and the results of this study confirm those findings.

The findings of this study are similar to those found in the work of Fernald; Gillingham and Stillman; Caban: and Hardin, Bernstein, and Shands. These studies found that mental imagery involving the senses proved beneficial and helped the child feel the word by hearing its parts in their heads.

The significant gains shown by the group using colored markers in relationship to the kinestetic modality may prove to be a positive step in motivating pupils to become better spellers. These pupils appeared more interested in doing this spelling task each week and felt that tracing the word with colored markers helped keep their interest and motivated them to complete their work.

RECOMMENDATIONS FOR FURTHER RESEARCH

The testing instrument, the time alloted for the study, and the spelling abilities of each group are the factors that should be noted in comparing this with previous studies. It is recommended that more time be alloted in order to determine the effectiveness of this spelling strategy.

BIBLIOGRAPHY

Allred, R.A., Baird, L. O. & Read, E. Three Studies in elementary spelling instruction. Provo, UT: Brigham Young University, 1964.

Bartholome, L.W., Using the typewriter for learning: Spelling. Balance Sheet,1977, 58, 196-198, 200.

Beers, C.S., The relationship of cognitive development to spelling and reading abilities. In Henderson, E. H. and Beers, J. W. (Eds.). Developmental and Cognitive Aspects of Learning to Spell: A Reflection of Word Knowledge. Newark, DE: International Reading Association, 1980, 74-84.

Bloomer, R. T. Concepts of meaning and the reading and spelling difficulty of words. Journal of Educational Research, 1961, 54, 178-182.

Caban, J. P., et al.. Mental imagery as an approach to spelling instruction. Journal of Experimental Education, 1978, 46 (3), 15-21.

Cahen, L. S., Craun, M. J., & Johnson, S.K. Spelling difficulty--A survey of the research. Review of Educational Research, 1971, 41, 281-301.

Cotton, K. and Savard, W. G. Instructional grouping: Ability grouping. Portland: Northwest Regional Ecucational Laboratory, May 1981.

Cotton, Kathleen. Effective Practices For Spelling Instruction. Title II Basic Skills Improvement, Denver, Colorado, January 1982.

Fitzgerald, J. A. The Teaching of spelling. Milwaukee: Bruce Publishing Company, 1951.

Fitzsimmons, R.J. and Loomer, B. M. Spelling: Learning and instruction. Des Moines: Iowa State Department of Public Instruction; Iowa City: Iowa University, 1978. (ERIC/EDRS No. ED 176 285).

Gates, A. J. An experimental comparison of the study-test and test-study methods in spelling. Cited in Loomer, B. M. Education's Guide to Spelling Research and Practice Des Moines: Iowa State Department of Public Instruction; Iowa City: Iowa University, 1978.

BEST COPY AVAILABLE

Hanna, P.R., et al.. Needed research in spelling. In T.D. Horn (Ed.) Research on Handwriting and Spelling. Washington, D.C., National Conference on Research in English, 1966, pp. 56-57.

Hodges, R.E. In Adam's fall: A brief history of spelling instruction in the United States. In H.A. Robinson (Ed) Reading and Writing Instruction in the United States: Historical Trends. Urbana: ERIC clearinghouse on Reading and Communication Skills; Neward, Delaware: International Reading Association, 1977.

Hollingsworth, P.M. Spelling lists--Outdated? Cited in: Fitzsimmons, R.J., and Loomer, B.M. Spelling: Learning and Instruction. Des Moines: Iowa State Department of Public Instruction, Iowa City: Iowa University, 1978.

Horn, E. Teaching spelling: What research says to the teacher. American Educational Research Association, November 1963.

Horn, T. Spelling. Encyclopedia of Educational Research. (4th Ed.). New York: Macmillan, 1969.

Lamberski, R.J. & Dwyer, F.M. The Instructional Effect of Color in Intermediate and Delayed Reaction. Journal of Instructional Psychology, 1981, 8(4), 122-131.

Loomer, B.M. Educator's Guide to Spelling Research and Practice. Des Moines: Iowa State Department of Public Instruction: Iowa City: Iowa University, 1978.

Mazurkiewicz, A.J. Phoneme-grapheme correspondences as cues to spelling improvements: A further appraisal. Reading World, 1978, 17, 190-196.

APPENDIX

Raw Data for Computation

Spelling Pre-test for Experimental Group

STUDENT	CORRECT ITEMS	% PERCENTAGE GRADE
1	32	40
2	18	23
3	28	35
4	34	43
5	22	28
6	44	55
7	38	48
8	23	29
9	30	38
10	25	31
11	27	34
12	32	40
13	19	24
14	33	41
15	41	51
16	38	48
17	25	31
18	48	60

Spelling Post-test Experimental Group

STUDENT	CORRECT ITEMS	% PERCENTAGE GRADE	GAIN
1	56	70	24
2	54	68	36
3	50	63	22
4	59	74	25
5	68	83	46
6	44	55	0
7	69	84	31
8	69	84	46
9	68	83	38
10	64	80	39
11	46	58	19
12	70	86	38
13	45	56	26
14	48	60	15
15	72	88	31
16	51	64	13
17	69	84	44
18	69	84	21

*Scores Raw Data for Computation

Spelling Pre-test for Controlled Group

*STUDENT	*CORRECT ITEMS (80)	*% PERCENTILE SCORE
1	46	58
2	43	54
3	45	56
4	45	56
5	46	58
6	30	37
7	37	46
8	47	59
9	36	45
10	35	44
11	60	75
12	39	49
13	52	65
14	37	46
15	43	54
16	28	35
17	50	63
18	51	64
19	35	44
20	37	46
21	30	37
22	56	70
23	18	23
24	36	45
25	19	24

Spelling Post-test for Controlled Group

STUDENT	CORRECT ITEMS	% PERCENTILE SCORE	GAIN
1	62	78	16
2	75	93	32
3	77	95	32
4	56	70	11
5	60	75	14
6	68	83	38
7	69	84	32
8	57	71	10
9	70	86	34
10	78	96	43
11	68	83	8
12	66	79	27
13	66	79	14
14	50	63	13
15	69	84	26
16	80	100	52
17	77	95	27
18	60	75	9
19	39	49	4
20	41	51	4
21	66	81	36
22	63	79	7
23	51	64	33
24	52	65	16
25	20	25	1